

What is claimed is:

- 1 1. An alignment mark for a plasma display panel,
2 comprising:
3 a first pattern, installed on a front substrate,
4 wherein the first pattern comprises at least one
5 line segment; and
6 a second pattern, installed on the position
7 corresponding to the first pattern of a rear
8 substrate, wherein the second pattern comprises
9 at least a hexagonal honeycomb pattern formed
10 with rib barriers, the line segment of the first
11 pattern is parallel to at least one side of the
12 hexagonal honeycomb pattern with a predetermined
13 distance, and the first and second patterns are
14 used to align the front and rear substrates, when
15 alignment is performed.
- 1 2. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a plurality of parallel line
3 segments.
- 1 3. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a V-shaped line segment, and the
3 angle thereof is the same as the angle of the hexagonal
4 honeycomb pattern of the second pattern, when alignment is
5 performed, the angle of the V-shaped pattern is aligned with
6 the corner of the hexagonal honeycomb pattern, thus these
7 two pattern profiles are parallel each other with a
8 predetermined distance therebetween.

1 4. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a hexagonal star-column pattern,
3 the tip portion thereof is V-shaped, and each angle of the
4 six columns corresponds to the six corners of the hexagonal
5 honeycomb pattern of the second pattern respectively, When
6 alignment is performed, six angles of the second pattern are
7 aligned with the six corners of the first pattern
8 respectively, and these two pattern profiles are parallel to
9 each other with a predetermined distance therebetween.

1 5. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a T-shaped pattern comprising a
3 horn column and a rectangle, and the angle of the horn
4 column is the same as the angle of the hexagonal honeycomb
5 pattern of the second pattern, when alignment is performed,
6 the horn column is aligned with the corner of the hexagonal
7 honeycomb pattern of the second pattern, and these two
8 pattern profiles are parallel to each other with a
9 predetermined distance therebetween.

1 6. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a first and a second T-shaped
3 pattern comprising a first and a second horn column and a
4 first and a second rectangle respectively, the first and
5 second rectangles are parallel with each other, and the
6 angles of the first and second horn columns are the same as
7 the opposite angles of the hexagonal honeycomb pattern of
8 the second pattern respectively, when alignment is
9 performed, the first and second horn columns are aligned
10 with the opposite corners of the hexagonal honeycomb pattern

11 of the second pattern, and these two pattern profiles are
12 parallel to each other with a predetermined distance
13 therebetween.

1 7. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a T-shaped pattern comprising a
3 horn column and a rectangle, and the angle of the horn
4 column is the same as the angle of the hexagonal honeycomb
5 pattern of the second pattern, when alignment is performed,
6 the horn column is aligned with the corner of the hexagonal
7 honeycomb pattern of the second pattern, and two pattern
8 profiles overlap.

1 8. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a first and a second T-shaped
3 pattern comprising a first and a second horn column and a
4 first and a second rectangle respectively, the first and
5 second rectangles are parallel with each other, and the
6 angles of the first and second horn columns are the same as
7 the opposite angles of the hexagonal honeycomb pattern of
8 the second pattern respectively, when alignment is
9 performed, the first and second horn columns are aligned
10 with the opposite corners of the hexagonal honeycomb pattern
11 of the second pattern, and two pattern profiles overlap.

1 9. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a pentagon comprising two right
3 angles and three non-right angles, and the three non-right
4 angles are the same as the three corresponding angles of the
5 hexagonal honeycomb pattern of the second pattern
6 respectively, when alignment is performed, the three non-

7 right angles of the first pattern are aligned with the three
8 corresponding corners of the second pattern, and two pattern
9 profiles are parallel.

1 10. The alignment mark as claimed in claim 1, wherein
2 the first pattern comprises a first and a second pentagon
3 comprising two right angles and three non-right angles, and
4 the three non-right angles are the same as the three
5 corresponding angles of the hexagonal honeycomb pattern of
6 the second pattern respectively, when alignment is
7 performed, the three non-right angles of the first pattern
8 are aligned with the three corresponding corners of the
9 second pattern, and two pattern profiles are parallel.

1 11. The alignment mark as claimed in claim 1, wherein
2 the first pattern installed on the front substrate comprises
3 non-transparent bus electrode material or black matrix
4 material.

1 12. A plasma display panel (PDP), comprising:
2 a front substrate; and
3 a rear substrate, wherein at least one set of alignment
4 marks is installed on the front and rear
5 substrates, the set of alignment marks comprise a
6 first and second patterns installed on the
7 predetermined assembling position of the first
8 and second substrate respectively, the second
9 pattern comprises at least a hexagonal honeycomb
10 pattern formed with rib barriers, a line segment
11 of the first pattern is parallel to at least one
12 side of the hexagonal honeycomb pattern with a

13 predetermined distance therebetween, and the
14 first and second patterns are used to align
15 between the front and rear substrates, when
16 assembling a PDP.

1 13. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a plurality of parallel
3 line segments.

1 14. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a V-shaped line segment,
3 and the angle thereof is the same as the angle of the
4 hexagonal honeycomb pattern of the second pattern, when
5 alignment is performed, the angle of the V-shaped pattern is
6 aligned with the corner of the hexagonal honeycomb pattern,
7 thus these two pattern profiles are parallel with each other
8 with a predetermined distance therebetween.

1 15. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a hexagonal star-column
3 pattern with the same center, the tip portion thereof is V-
4 shaped, and each angle of the six columns corresponds to the
5 six corners of the hexagonal honeycomb pattern of the second
6 pattern respectively, when alignment is performed, six
7 angles of the second pattern are aligned with the six
8 corners of the first pattern respectively, and two pattern
9 profiles are parallel to each other with a predetermined
10 distance therebetween.

1 16. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a T-shaped pattern

3 comprising a horn column and a rectangle, and the angle of
4 the horn column is the same as the angle of the hexagonal
5 honeycomb pattern of the second pattern, when alignment is
6 performed, the horn column is aligned with the corner of the
7 hexagonal honeycomb pattern of the second pattern, and two
8 pattern profiles are parallel to each other with a
9 predetermined distance therebetween.

1 17. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a first and a second T-
3 shaped pattern comprising a first and a second horn column
4 and a first and a second rectangle respectively, the first
5 and second rectangles are parallel with each other, and the
6 angles of the first and second horn columns are the same as
7 the opposite angles of the hexagonal honeycomb pattern of
8 the second pattern respectively, when alignment is
9 performed, the first and second horn columns are aligned
10 with the opposite corners of the hexagonal honeycomb pattern
11 of the second pattern, and two pattern profiles are parallel
12 to each other with a predetermined distance therebetween.

1 18. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a T-shaped pattern
3 comprising a horn column and a rectangle, and the angle of
4 the horn column is the same as the angle of the hexagonal
5 honeycomb pattern of the second pattern, when alignment is
6 performed, the horn column is aligned with the corner of the
7 hexagonal honeycomb pattern of the second pattern, and two
8 pattern profiles overlap.

1 19. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a first and a second T-
3 shaped pattern comprising a first and a second horn column
4 and a first and a second rectangle respectively, the first
5 and second rectangles are parallel with each other, and the
6 angles of the first and second horn columns are the same as
7 the opposite angles of the hexagonal honeycomb pattern of
8 the second pattern respectively, when alignment is
9 performed, the first and second horn columns are aligned
10 with the opposite corners of the hexagonal honeycomb pattern
11 of the second pattern, and two pattern profiles overlap.

1 20. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a pentagon comprising
3 two right angles and three non-right angles, and the three
4 non-right angles are the same as the three corresponding
5 angles of the hexagonal honeycomb pattern of the second
6 pattern respectively, When alignment is performed, the three
7 non-right angles of the first pattern are aligned with the
8 three corresponding corners of the second pattern, and two
9 pattern profiles are parallel therebetween.

1 21. The plasma display panel as claimed in claim 12,
2 wherein the first pattern comprises a first and second
3 pentagons comprising two right angles and three non-right
4 angles, and the three non-right angles are the same as the
5 three corresponding angles of the hexagonal honeycomb
6 pattern of the second pattern respectively, when alignment
7 is performed, the three non-right angles of the first

Client's ref.:AU0307069
Our ref:0632-A50035us/final/david/steve

8 pattern are aligned with the three corresponding corners of
9 the second pattern, and two pattern profiles are parallel.

1 22. The plasma display panel as claimed in claim 12,
2 wherein the first pattern installed on the front substrate
3 comprises non-transparent bus electrode material or black
4 matrix material.